Comments

E-0043/009, EM-0217/009, EM-0218/009, L-0056/009, LM-0017/009, LM-0018/009

The Hanford Only waste volumes should account for all waste currently at the Hanford Site, including but not limited to: 1) high-level tank wastes; 2) spent reactor cores (Navy and otherwise); 3) wastes in the PUREX tunnels; 4) waste in closed buildings; 5) wastes in the soils of Hanford; 6) wastes in the groundwater of Hanford; 7) wastes in the sediment of Hanford; 8) wastes in the biota of Hanford; and 9) all other sources of waste within the limits of Hanford. Any and all analysis based on a Hanford Only waste volume that does not include all the waste currently at the Hanford Site is inaccurate and incomplete. After accounting for all waste at Hanford, DOE should use the revised Hanford Only waste volume in the analysis.

E-0043/022, EM-0217/022, EM-0218/022, L-0056/022, LM-0017/022, LM-0018/022

GAP requests that DOE immediately create an accurate inventory of all nuclear waste currently stored and disposed of at the Hanford site.

E-0047/011

[The HSW EIS fails to assess:] Related waste disposal activities outside the Project Hanford Management Contractor (e.g., ERDF).

E-0047/013

[The HSWEIS fails to assess:] Total cumulative impacts for current and future wastes under the various alternatives.

E-0047/029

The EIS also fails to assess and disclose the long-term impacts from waste buried prior to 1970.

E-0050/005

The HSW EIS lacks an analysis of cumulative risk that takes into account all of the existing waste at the site and how the importation of new waste would impact the treatment and storage of waste at Hanford. A cumulative risk analysis needs to be performed that considers long-term impacts to groundwater, the ecosystem, public health, and the Columbia River.

E-0055/020

Tiering off of the WMPEIS, this EIS was legally required to consider the entire spectrum of Waste Management Program wastes at Hanford and the addition of ER [environmental restoration] program and offsite wastes to the Hanford Waste Management Programs' wastes:

The revised draft HSW EIS fails to consider the impacts of the following wastes, and the cumulative impacts from these wastes:

1. Previously leaked tank waste,
2. Residual waste DOE proposes to leave in tanks,
3. Wastes in related ancillary equipment and piping,
4. Hazardous or mixed wastes buried in the Low-Level Burial Grounds, and releases from the burial grounds;
5. Waste currently uncharacterized and stored in the PUREX tunnels,
6. Wastes from dismantling and disposing of various facilities, and
7. Wastes from dismantling the vitrification and treatment plants.
8. U.S. Ecology low-level waste disposal facility.
9. U.S. Navy compartments;
10. Possible wastes associated with processing and disposal of the cesium and strontium capsules; and,
11. Transuranic wastes (TRU) proposed to be imported; and, TRU "stored" or already buried on site.

F-0003/003

No comprehensive analysis of the existing transuranic waste situation and documentation of what is there, including leakage in groundwater in soils.

Cumulative Impacts

F-0019/003

I support the need for an analysis of cumulative risk of all existing waste, not just selected risks.

F-0029/003

Also, there is not an analysis of pre-1972 wastes currently contaminating the Hanford site.

F-0030/004

What about an analysis of the pre 1972 wastes?

L-0014/006, L-0022/006

The issue of the pre-1970 TRU wastes must be addressed. Unless it can be clearly shown that these wastes are not now or in the future hazardous to the public, they must be removed, repackaged and properly disposed of. The current draft EIS does not address this issue.

L-0033/002

[This EIS must be revised to fully evaluate and share with the public] a disclosure of impacts of past and continued waste disposal at Hanford (The Existing Condition)[.]

L-0039/004

This draft EIS does not address all existing Hanford wastes, nor does it integrate the assessment of the Environmental Restoration wastes with the tank wastes.

L-0039/005

Residual waste DOE proposes to leave in tanks [is not adequately analyzed in this EIS.]

L-0039/006

Leaked tank wastes [are not adequately analyzed in this EIS.]

L-0039/007

Wastes in related ancillary equipment and piping [are not adequately analyzed in this EIS.]

L-0039/010

Waste currently uncharacterized and stored in the PUREX tunnels [is not adequately analyzed in this EIS.]

L-0039/015

Additionally, DOE should analyze the potential worst-case impacts from overlapping releases. Future releases from these disposals, which exceed regulatory limits, will trigger additional cleanup requirements under the Resource Conservation and Recovery Act (RCRA) and/or the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

L-0039/021

A comprehensive EIS, integrating all impacts from both Hanford and offsite waste, is required before offsite importation decisions can be made.

L-0041/008

The HSW-EIS does not take a comprehensive look at all the Hanford origin waste that is now and will continue to impact the Hanford environs. The HSW-EIS excludes from analysis any residual tank waste following cleanup of the Hanford tanks (tank heels), leaked waste from the tanks, waste in the PUREX tunnels, and other pertinent wastes. DOE is obligated under the CEQ regulations to include impacts from these wastes in the HSW-EIS. In addition, DOE indicates that future site-wide or project level NEPA reviews will be necessary. These additional analyses should be conducted now, as a part of the HSW-EIS, so that we can fully determine the impacts of all waste activities at Hanford.

L-0044/082

S14 Figure S.6 also fails to convey the total residual burden at Hanford by excluding pre-1964 DOE wastes

and ERDF.

E-0049/006, L-0048/006

The revised EIS does not account for all waste at Hanford, and thus does not fully analyze the cumulative impacts of past or future waste disposal activities. In order to support a Record of Decision the revised EIS must – at a minimum – include the entire existing and proposed waste inventory.

E-0049/009, L-0048/009

The Board is troubled that all scenarios show unacceptable future risk to Native Americans. While we agree that it is virtually impossible to accurately predict impacts 10,000 years in the future, the fact that DOE's own analyses show detrimental impacts should lead DOE to reconsider its proposed actions.

L-0052/004

Cumulative Affects. It is difficult for ERWM to get a relatively clear view from this document of the totality of the potential threats to treaty resources (in particular, water). We read and hear about many sources of contamination such as waste management waste; environmental restoration waste; on-site and off-site waste volumes which vary; transuranic (TRU) waste; addition of immobilized low activity waste (ILAW); the existing contamination plumes in the vadose zone and groundwater; the canyons; the remains of the tanks and tank residue; and pre-1970 waste burials with inadequate records for proper characterization, to name a few. It remains unclear how truly comprehensive these analyses of cumulative affects are, in spite of the monumental effort by DOE to deal with impacts across the site.

L-0054/010

Third, the cumulative impacts analysis is fundamentally flawed because it does not account for past releases from single-shell tanks, pre-1970 TRU waste and other waste streams.

L-0055/001

Although this draft does provide more important information than the last draft of the HSWEIS the facilities described in this decision document do not reflect a complete analysis or the best options for storage of nuclear waste at the Hanford Nuclear Reservation.

L-0055/002

DOE should meet its commitment to quantify and address the cumulative impact of all radioactive and chemical waste at the Hanford site and should not limit this analysis to such a narrow scope without this consideration. Issues at Hanford are ultimately cumulative and additive in nature and piecemeal analysis as conducted on all projects at the Hanford Site is inappropriate.

L-0057/003

The cumulative risks are too great for the future of our states and economy.

P-0008/006

ENOUGH HEALTH AND ENVIRONMENTAL RISKS!

P-0016/002

I own property close to the Hanford Reservation and it is a threat to my health[.]

P-0123/001

You [DOE] are putting my community [Hood River, OR] at risk for long term health problems from leakage at the site.

P-0135/003

...peoples lives, jobs, are threatened [by radioactive waste]!

P-0169/002

Please stop contaminating our region!

Cumulative Impacts

THR-0001/006

So, they say they are doing a cumulative impact analysis, or cumulative impact assessment. They aren't. They are doing it piecemeal.

THR-0004/003

The document reviews a portion of the total inventory at Hanford. So one of our comments or series of our comments will be central around please look at the entire inventory so that we understand the whole impact. That's our concern, because there's the pre-'70s waste, there's the tank leaks, there's the residual waste when they are done with some of the environmental restoration cleanup.

THR-0004/004

You need to look at it in the totality to see what is the total risk.

THR-0005/004

Thirdly, the cumulative risk. As a citizen in Oregon, I strongly feel I deserve an analysis to be done on the cumulative risks that have already been done [currently exist] on the Hanford Site.

TLG-0002/003

We don't believe that it's still fully comprehensive in terms of looking at all the impacts from all the historic waste disposal practices that have been going on at Hanford since the early to mid 1940's. We don't believe it takes into account all the different waste streams at Hanford that some of the buried wastes, some of the wastes that will be left in the tanks. And without that, we don't believe there is a comprehensive way to really look at what the impacts are. So without knowing what the impacts have been, we don't believe it's possible to tell what the added increment of impact will be. And we would like to see a more comprehensive, encompassing analysis of what those impacts have been.

TPO-0006/003

There is, apparently, no comprehensive analysis of the impact that groundwater contamination under the tanks might pose in the scheme of all the other contamination that might be eventually caused by solid waste disposals.

TPO-0011/006

The fact that cumulative impacts, again, are not taken into account.

TPO-0017/003

We have to finally address the cumulative risks, the comprehensive groundwater.

TSE-0009/003

And first analyze the cumulative risk from the wastes that are already at Hanford.

TSE-0010/003

Hanford Site manager, Keith Klein, he insists that the new waste imports will not add environmental risks. I disagree[.]

TSE-0011/005

The scope of this EIS is extremely narrow. And as a result, it makes little tiny packages out of a huge problem. But it also allows the DOE to avoid any analysis of what the whole accumulative effect of all this waste is. So we never get a sense of cumulative waste.

TSE-0012/001

The EIS must be amended to address cumulative impacts of burial of hazardous wastes, past, present and future.

TSE-0017/001

...the currently buried wastes leak[.]

Cumulative Impacts

TSE-0031/002

It [the DEIS] does not include most liquid waste.

TSE-0031/006

It [the DEIS] does not include most environmental restoration wastes that are generated as part of the CERCLA process[.]

TSE-0031/007

It [the DEIS] does not include commercial low-level waste destined for U.S. Ecology.

TSE-0031/013

And in order to evaluate the cumulative impacts, we need to understand the cumulative risks, not just the cumulative volumes. How can we calculate cumulative risk when the risk of the current waste at Hanford is not understood?

Response

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

Groundwater contamination beneath the Hanford Site is being studied and remediated by the ongoing CERCLA program in accordance with the Tri-Party Agreement. The CERCLA process considers legally applicable Federal, State, and local laws or relevant and appropriate requirements (ARARs). Any decisions reached by DOE on the basis of analysis in the HSW EIS would be implemented in accordance with applicable Federal, State, and local laws and regulations. See Volume II Appendix N, Section N.2.4.

Comments

TPO-0002/005

They aren't looking at all of the waste sites all over the Hanford site and looking at the cumulative impacts to groundwater over time. Their simplistic model that they call, they use the SAC, System Assessment Capability, is like a Volkswagen in 1942.

Response

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA

remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

The System Assessment Capability (SAC) is a set of assessment tools developed by DOE that enables its users to model the movement of contaminants from all waste sites at Hanford, through the vadose zone, through the groundwater, and into the Columbia River (DOE-RL 1999b, c; DOE-RL 2000). The HSW EIS uses the SAC to estimate cumulative impacts of contaminants on human health, ecology, and the local cultures and economy.

SAC, has been designed as a stochastic capability with an option to perform deterministic simulations. It uses the groundwater model of the Hanford Site produced and supported by the Groundwater Monitoring Program. DOE agrees that the one-dimensional vadose zone modeling does not capture the complexity needed to model clastic dikes. The current implementation of the one-dimensional model has been history matched to existing conditions. Currently, the groundwater portion of this model implements a three-dimensional conceptual model of the unconfined aquifer. This model has been inverse calibrated to Hanford Site water table measurements from 1944 to present, and uses knowledge of geohydrologic units and field measurements of hydraulic conductivity to condition the model calibration. Future revisions of the SAC will incorporate inverse calibrated alternate conceptual models of the aquifer. As of August 2003, uncertainty in groundwater contaminant migration and fate is represented by the uncertainty in contaminant mobility as reflected in uncertainties in linear sorption isotherm model parameters (for example, distribution coefficients for various contaminants). The HSW EIS provides a conservative analysis commensurate with the purpose of the HSW EIS, which is to bound and compare the consequences of the alternatives. Volume II Appendix L presents a 10,000 year post-closure assessment that was produced using the SAC.

As part of its development, the System Assessment Capability was reviewed by the DOE Integration Project Expert Panel, an eight (8) member panel that provided broad, independent oversight of many Hanford Groundwater/Vadose Zone Integration Project activities. A review of SAC Rev 0. and related groundwater integration issues at Hanford is summarized in the report "Integration Project Expert Panel - Closeout Report for Panel Meeting of September 26-28, 2001" (Integration Project Expert Panel 2001). The HSW EIS uses an updated version of SAC for cumulative groundwater impacts analysis.

Comments

L-0044/114

The discussion of cumulative impacts does not provide sufficient analyses of all wastes and total risks. Absent such analysis, Ecology may not have sufficient information to make regulatory determinations about safe and compliant treatment, storage, and disposal of all Hanford waste.

Response

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford

production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

The HSW EIS, as a NEPA document, is not intended to function as, or contain the same information as, a compliance agreement, a permit application, or a management plan under other Hanford regulatory programs. The HSW EIS provides information to support DOE's decision-making process at Hanford, and DOE recognizes that additional specific information will be needed to support future regulatory processes.

Comments

E-0047/012

[The HSW EIS fails to assess:] Tank Farms releases and waste remaining in Single Shell Tanks
Wastes in related ancillary equipment and piping
Cribs with significant inventories of radionuclides
Pre-1970 potential Transuranic (TRU) wastes
Hazardous or mixed wastes buried in the Low-Level Burial Grounds, and releases from the burial grounds
Waste currently uncharacterized and stored in the PUREX tunnels
Wastes from dismantling and disposing of various facilities
Wastes from dismantling the vitrification and treatment plants.
Plans by ORP [Office of River Protection] to treat up to 750,000 gallons of tank waste as TRU mixed waste, eventually generating 20,000 drums (3,000 m3) of mixed TRU waste
The Draft West Valley Waste Management Demonstration Project EIS Alternative B that proposes sending 21,000 m3 total of LLW and MLLW for disposal, and TRU and High Level Waste (HLW) to Hanford for interim storage, are not included.

Response

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

DOE plans to dispose of HLW and spent nuclear fuel from commercial nuclear power and DOE facilities at the Yucca Mountain National Repository being developed under the Nuclear Waste Policy Act. Storage of HLW or spent nuclear fuel is not within the scope of this EIS.

DOE is preparing the Environmental Impact Statement for Retrieval, Treatment, and Disposal of Tank Waste and Closure of Single Shell Tanks at the Hanford Site (68 FR 1052), which will address the potential

environmental impacts from retrieving and processing tank wastes. DOE will conduct appropriate environmental review to support future decisions for closing the vitrification plant (i.e., Waste Treatment Plant) and other existing treatment and associated facilities.

Alternative B in the draft West Valley Demonstration Project EIS is not DOE's preferred alternative. Hanford is among a number of large sites being considered for interim storage of TRU waste prior to shipment to WIPP and is one of two DOE sites considered for low-level waste and mixed low-level waste disposal consistent with WM EIS (DOE 1997b) decisions.

Comments

F-0019/005

I call for an EIS study that assess and discloses long term impacts from hazardous waste disposal[.]

Response

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

The HSW EIS includes the impacts of all LLBG previously disposed waste in its evaluations of long-term groundwater impacts in Volume I Section 5.3, Volume I Section 5.11, Volume I Section 5.14, and in Volume II Appendixes F, G, and L. LLBG previously disposed waste includes LLW disposed of since 1962, LLW disposed before and after the regulatory definition of TRU promulgated in 1970, and wastes disposed before and after the application of RCRA hazardous waste management standards to certain Hanford LLW streams in 1987. The HSW EIS impact estimates are based on chemical and radionuclide inventories. Past-buried LLBG wastes will be addressed within the framework for managing RCRA past practice and CERCLA units established under the TPA.

Comments

L-0044/138

Per WAC 197-11-792 Scope, to determine the scope of EIS's, agencies consider three types of actions, including (a)(ii) connected actions (which includes parts of proposals that are closely related) and three forms of impacts, including cumulative impacts (c)(iii). Ecology views the scope of the RHSW EIS to be incomplete because the waste volumes in the Hanford Only waste stream ignore waste disposed in older burial grounds, environmental restoration waste already disposed in the Environmental Restoration Disposal Facility (ERDF), commercial waste disposed of in the U.S. Ecology commercial waste facility adjacent to the Hanford 200 Area, engineered disposal facilities (cribs, ponds, and ditches), and single shell tank releases.

Response

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7):

Cumulative Impacts

"Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

The HSW EIS includes the impacts of all LLBG previously disposed waste in its evaluations of long-term groundwater impacts in Volume I Section 5.3, Volume I Section 5.11, Volume I Section 5.14, and in Volume II Appendixes F, G, and L. LLBG previously disposed waste includes LLW disposed of since 1962, LLW disposed before and after the regulatory definition of TRU promulgated in 1970, and wastes disposed before and after the application of RCRA hazardous waste management standards to certain Hanford LLW streams in 1987. The HSW EIS impact estimates are based on chemical and radionuclide inventories. Past-buried LLBG wastes will be addressed within the framework for managing RCRA past practice and CERCLA units established under the TPA.

DOE believes this HSW EIS complies with applicable NEPA requirements.

Comments

L-0055/026

Figure S.4 and 1.4 breaks down the waste arriving and leaving Hanford. From this figure, it appears that over three times more of MLLW is arriving at Hanford than is already here. Also, more LLW will be arriving at Hanford than is already here. Only through the processing of tank waste, capsules (K basin), and spent nuclear fuel is there any reduction at Hanford. This figure does not account for what has been lost or trapped in the vadose zone and ground water at Hanford. Nor as stated later (Summary, Page S.13) does it include waste from older burial ground, waste disposed of in ERDF [Environmental Restoration Disposal Facility], decommissioned Naval reactor compartments, or commercial waste in the U.S. Ecology facility. Since all of this waste will be arriving at Hanford, they are responsible for treating and disposing of it. This is coming out of Hanford's budget that could instead be spent on cleaning up their current ground water contamination. Hanford DOE should not have their budget limited by accepting, treating, and monitoring this offsite waste.

Response

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from

the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

DOE requests funds from Congress based on its cleanup schedules.

Comments

L-0012/003

We have many questions that cannot be answered by the time DOE plans to issue decisions on this EIS. Some of these questions are to be "answered" in the tank closure decisions for which there is no draft EIS yet. How can the decisions from the various documents support each other in a holistic and comprehensive way when the Department continues to approach the issues of nuclear waste in a piecemeal fashion? The impacts of the tank wastes after treatment from whatever technologies you plan to use must be a part of this document. Are we going to bury these wastes on site? Will waste from the tanks and the trenches be permanently buried, will they be retrievable if your assumptions are wrong? We still have no decisions on the final form of the wastes-how can you show us accurate impacts for the short or long term?

L-0041/007

In our August 15, 2002 comment letter, we reiterated a concern about a piecemeal approach to decision –making on Hanford cleanup issues. We asked DOE to address the Council on Environmental Quality (CEQ) regulations to address "connected actions" to prevent minimizing potential environmental consequences by segmenting actions. We further asked DOE to list the analyses deferred by the Waste Management Programmatic Environmental Impact Statement (PEIS) – which selected Hanford as [the] receiving site for waste from other DOE sites – to the draft HSW-EIS. The draft HSW-EIS fails to do either. The revised draft HSW-EIS creates a kind of circular logic that refers to the PEIS to the HSW-EIS and the HSW-EIS back to the PEIS, making a comprehensive analysis impossible.

Response

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

The HSW EIS evaluates the consequences of various site-specific alternatives to the ongoing waste management program at Hanford, consistent with WM PEIS (DOE 1997b) decisions regarding certain TRU waste, LLW, and MLLW streams. Site-specific waste management actions at Hanford involve transportation, treatment and processing of TRU waste and MLLW, disposal of LLW, MLLW and ILAW, and storage of LLW, MLLW, and TRU waste. A discussion of the WM PEIS and other NEPA review documents relevant to the HSW EIS can be found in Volume I Section 1.5.

The WM PEIS was a comprehensive evaluation of DOE nationwide waste management. The WM PEIS

evaluated a broad suite of alternatives for waste management across the DOE complex, including managing most waste at generator facilities, or consolidating waste management at fewer sites that have existing facilities suitable to accept waste from other facilities. The impacts of those alternatives were compared for a variety of waste volumes at different DOE sites, including larger quantities of waste than are evaluated in the HSW EIS. The general result of the WM PEIS was that radioactive and hazardous wastes generated at a DOE site should be disposed of at that site unless the site was not capable of or not technically able to support those actions. DOE determined there was sufficient information in the WM PEIS to support decisions regarding the sites that were suitable for long-term waste management missions. Those decisions included processing and disposing of Hanford waste at Hanford, and the importation of wastes from other sites that could not adequately handle them. Decisions made as part of the WM PEIS made Hanford available for the disposal of low-level waste and mixed low-level waste from other DOE generators. The initial WM PEIS decisions related to LLW, MLLW, and TRU waste were issued between January 1998 and February 2000.

DOE believes this HSW EIS complies with applicable NEPA requirements.

In response to public comments, DOE has conducted a route- and generator-specific offsite transportation analysis using updated highway routing and 2000 census data. See Volume I Section 5.8 and Volume II Appendix H. The potential impacts identified in the updated evaluation are similar to those presented in the WM PEIS (DOE 1997b) and the WIPP SEIS-II (DOE 1997c), and would not change conclusions or DOE-wide waste management decisions based on those studies.

Comments

L-0055/027

The actual waste is to be stored at Hanford is narrowly described. The "Hanford Only" waste volumes do not include waste disposed of in older burial grounds, environmental restoration waste disposed of in the Environmental Restoration Disposal Facility, decommissioned Naval reactor compartments, or commercial waste disposed of in the US Ecology facility. But these all potentially have impacts to the ground water and eventually the Columbia River. Major potential contamination to the ecology and ground water supply is being ignored. The Tank Waste is ignored, pre-1970 waste is ignored, Carbon Tetrachloride is not addressed, yet the EIS states that (page 3.52) that cumulative impacts from "all wastes intentionally disposed of on the Hanford site since the beginning of operations and waste forecast to be disposed of through cleanup completion". If these other waste types are ignored and the current EIS indicates an impact to the ground water, then it is alarming what could be the impact if these other sources are included.

Response

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

As indicated in Volume I Section 5.3, existing groundwater monitoring data does not indicate that releases

from the LLBGs have occurred. As indicated in Volume I Section 4.5.3.3, the carbon tetrachloride in the groundwater under Low-Level Waste Management Area 4 is from an upgradient source. Groundwater impacts from Low-Level Waste Management Areas 1, 2, 3, and 4 are discussed in the Hanford Site-Groundwater Monitoring for Fiscal Year 2001 document (Hartman et al. 2002). Groundwater contamination beneath the Hanford Site is being studied and remediated by the ongoing CERCLA program in accordance with the Tri-Party Agreement. See Volume II Appendix N, Section N.2.4.

Sampling being conducted as part of the ongoing CERCLA program in the LLW Management Area 4 has indicated the presence of carbon tetrachloride vapors in and near several trenches. During the trench sampling, industrial hygienists conducted repeated air monitoring at the top of the vent risers above trenches—a required health and safety practice for all sampling activities to protect the workers from potentially being exposed during the sampling. After the carbon tetrachloride had been detected in the air at the bottom of the trench, industrial hygienists again monitored the trench to ensure that other workers who entered this area in the burial ground would not be exposed. The measurements for all "organics" in the air above the trench (including carbon tetrachloride and its decay products) showed readings ranging from "not detectable" to 4 ppm—well below the standard set by the Occupational Safety and Health Administration (OSHA) of 10 ppm per day during a 40-hour work week. Samples taken in the "breathing zone" did not show any level of organics. The monitoring at the surface of the trenches indicated that toxic vapors were not emanating from the vent risers. Monitoring above and below the surface continues. Based on monitoring results and activities to be performed, industrial hygienists specify protective measures to be taken to protect workers. Common measures might include protective clothing, respiratory protection, and removal of contaminants from the work area.

Additional sampling for organic compounds, including carbon tetrachloride, in the Low Level Burial Grounds is being conducted as part of the on-going TRU waste retrieval activities. This sampling started October 15, 2003 and is being conducted in accordance with a State of Washington Department of Ecology approved Sampling and Analysis Plan (SAP). Sampling results will be used both for helping reduce risks during retrieval and to provide information for remediation planning.

In response to carbon tetrachloride vapors found in previous vent riser sampling in trench 4 of LLBG 218-W-4C, a vapor extraction system has been installed and started operation November 15, 2003. This system is currently intended to operate until the carbon tetrachloride concentrations are less than or equal to 10 ppmv. This work is being conducted prior to retrieval in order to reduce the likelihood that higher levels of carbon tetrachloride will be encountered during retrieval that could pose a higher risk to workers and slow progress on retrieval.

Retrieval of the suspect transuranic waste from this burial ground has already started and is anticipated to be complete within the next few years, with Trench 4 retrieval completed by the end of 2006. If the retrievably stored waste is the source of the carbon tetrachloride vapors, the completion of this retrieval will eliminate the source of contamination. Additional sampling results from the SAP sampling after the removal of the retrievably stored waste will provide information to assist in determining appropriate actions after the waste is removed.

Comments

E-0043/055, EM-0217/055, EM-0218/055, L-0056/055, LM-0017/055, LM-0018/055

Analysis of high level tanks, K-Basin sludge, reactor components, naval reactor compartments disposal, and existing pre-1970 TRU waste in the burial grounds, PUREX tunnels [should be included in the cumulative impact analysis.]

TPO-0007/002

However, we still have some serious concerns with this document. We don't think it's comprehensive enough. Although it's 3,000 pages long, there are still large volumes of waste that it doesn't analyze. For

example, as Doug mentioned, the pre-1970 TRU waste, it doesn't talk about the irretrievable tank heels that will remain once the tank retrievable is done. It doesn't talk about the tanks themselves, which current plans call for disposal in a landfill fashion onsite, nor the ancillary equipment associated with those tanks.

Response

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

DOE is preparing the Environmental Impact Statement for Retrieval, Treatment, and Disposal of Tank Waste and Closure of Single Shell Tanks at the Hanford Site (68 FR 1052), which will address the potential environmental impacts from retrieving and processing tank wastes. DOE will conduct appropriate environmental review to support future decisions for closing the vitrification plant (i.e., Waste Treatment Plant) and other existing treatment and associated facilities.

Comments

E-0043/021, EM-0217/021, EM-0218/021, L-0056/021, LM-0017/021, LM-0018/021

In order to predict cumulative impacts accurately, it is necessary to examine not only the particular waste to be imported, but also the impacts of the new waste when combined with waste already existing at the burial grounds. Therefore, the necessary precursor to an accurate cumulative impact analysis is an understanding of what waste already exists at Hanford. However, there is no such inventory of existing waste at Hanford. The EIS should integrate and consider the cumulative impacts of all Hanford waste decisions.

F-0012/004

Hanford does not even have a real inventory of existing waste or a satisfactory EIS.

L-0019/004, TSE-0002/004

Failure to inventory and classify existing wastes [is a an open issue in the revised draft.]

L-0033/004

[This EIS must be revised to fully evaluate and share with the public] the characterization of all previously buried and newly generated solid-waste at the Hanford Reservation.

L-0044/080

S.9 Figure S.4 does not include environmental restoration waste and contamination left in place outside the burial grounds; therefore it understates the residual burden to be left at Hanford.

L-0044/086

Sec. 1.3.2.3, p. 1.12 Environmental restoration waste and contamination left in place outside the burial grounds is not included. Therefore the residual burden to be left at Hanford is understated.

Cumulative Impacts

L-0044/139

The health impacts presented in the RHSW EIS are understated because they do not include the additional burden that would appear were the facilities not included in the analysis to be added (e.g., old burial grounds, ERDF).

THR-0002/001

And we are really concerned [about this EIS] because, as Greg mentioned, the cumulative risks we feel haven't been analyzed fully. DOE has not prepared a complete inventory and classification of the waste that's at Hanford already. So how can this EIS adequately analyze the risks of adding more waste. We don't know the cumulative risk from what's already in Hanford soil.

TPO-0006/002

There remains no significant analysis of waste from prior to 1970 for transuranic waste. In our mind, pre-1972 is among the least missed -- of the least understood waste at Hanford. And as a result, I think it has significant potential to pose significant threats. And there appears to be no analysis in this document.

TRI-0001/009

We do not find in this EIS an adequate inventory of the wastes in the current burial grounds. A failure to assess the current conditions is a necessary prerequisite before you begin assessing the cumulative impacts of adding more and building new waste disposal facilities.

The performance assessment for the burial grounds doesn't even mention hazardous waste being present.

TSE-0011/006

...knowing what is actually in the ground, as waste, and as contaminants, has not been analyzed.

TSP-0009/001

Regarding cumulative risk, it is I think intuitive as well as legally necessary for there to be a complete inventory of nuclear waste and waste generally at the Hanford Site in order to assess what additional impacts there would be when additional wastes are being added to the existing wastes. I think that it is in the interest of full disclosure that this information needs to be included in the Final EIS.

Response

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

Hazardous chemicals in MLLW have been characterized and documented since the implementation of RCRA at DOE facilities beginning in 1987. MLLW currently in storage, and MLLW that may be received in the future, would be treated to applicable state or federal standards for land disposal. Therefore, disposal of that waste is not expected to present a hazard over the long term because the hazardous constituents would either

be destroyed or stabilized by the treatment. Inventories of hazardous materials in stored and forecast waste are either very small, or consist of materials with low mobility. See Volume II Appendixes F and G.

Inventories of hazardous chemicals in waste were not generally maintained by industries in the United States prior to the implementation of RCRA. Consistent with these general practices, inventories of hazardous chemicals in radioactive waste were not required to be determined or documented before the application of RCRA to radioactive mixed waste at DOE facilities in late 1987. Wastes placed in the LLBGs before late 1987 have not been specifically characterized for hazardous chemical content, but they have been evaluated in the EIS alternatives relative to their radionuclide inventories. In addition, preliminary estimates of chemical inventories in this waste have been developed for analysis in the HSW EIS, and a summary of their potential impacts on groundwater has been added to Volume I Section 5.3 and Volume II Appendix G.

In addition, the October 23, 2003 Settlement Agreement contains proposed milestones in the M-91-03-01 Tri-Party Agreement Change Package for retrieval and characterization of suspect TRU waste retrievably stored in the Hanford LLBGs (United States of America and Ecology 2003). As part of that agreement, DOE will manage the retrievably stored LLBG waste under the following assumptions: (1) all retrievably stored suspect TRU waste in the LLBGs is potentially mixed waste; and (2) retrievably stored suspect TRU waste will be managed as mixed waste unless and until it is designated as non-mixed through the WAC 173-303 designation process.

Interactions among different types of waste that could potentially mobilize radionuclides have also been considered as part of the HSW EIS analysis. However, such interactions typically require specific chemical environments or large volumes of liquid as a mobilizing agent, neither of which are known to be present in the solid waste disposal facilities currently in use (see discussion in Volume II Appendix G). Possible effects of this type could be mitigated by selecting candidate disposal sites to avoid placing waste in locations where previous contamination exists.

Waste sites and residual soil contamination remaining at Hanford over the long term, and which are not specifically evaluated as part of the HSW EIS alternatives, have been evaluated previously as part of NEPA or CERCLA reviews. In those studies, the risks associated with older solid waste burials, tank waste residuals and leaks, and contaminated soil sites were found to be very small, even for alternatives that considered stabilization of the waste in place (DOE 1987, DOE and Ecology 1996, Bryce et al. 2002). Further evaluation of tank wastes is anticipated in the "Environmental Impact Statement for Retrieval, Treatment, and Disposal of Tank Waste and Closure of Single-Shell Tanks at the Hanford Site" (68 FR 1052). The cumulative groundwater impacts analysis in the HSW EIS also includes those wastes, as described in Volume I Section 5.14 and Volume II Appendix L.

DOE plans to characterize pre-1970 inactive burial grounds and contaminated soil sites, as well as the active LLBGs considered in the HSW EIS alternatives, under the RCRA past practice or CERCLA processes to determine whether further remedial action would be required before the facilities are closed. As part of that process, the long-term risks from these wastes would either be confirmed to be minimal, or the waste would be remediated by removal, stabilization, or other remedial actions to reduce its potential hazard. In all cases, the impacts from these previously disposed wastes would be the same for all alternative groups considered in the HSW EIS, and would not affect the comparisons of impacts among the alternatives or the decisions made regarding disposal of waste received in the future.

DOE believes this HSW EIS complies with applicable NEPA requirements.

Comments

L-0044/046

CRD, p. 3.80 Original comment #16 stated, in part, "The exclusion of pre-1970 TRU waste from analysis is inappropriate." The original comment was focused on the LLBG. DOE's response was basically that waste disposed of prior to 1970 will be addressed via CERCLA. This is of concern because, although LLBG is part of a much larger CERCLA site, it is also a RCRA TSD and must meet the regulatory requirements for operation and/or closure under WAC 173-303. DOE's response also says cumulative impacts from pre-1970 wastes are addressed in the revised HSW-EIS, and reference Sections 3.0 & 5.0 and App L. However, review of these sections reaffirms that waste disposed of prior to 1987 (when RCRA first applied to mixed waste at Hanford) did not receive the characterization that is required by Hanford and, as such, limited information exists and uncertainties are great.

Response

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

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Inventories of hazardous chemicals in waste were not generally maintained by industries in the United States prior to the implementation of RCRA. Consistent with these general practices, inventories of hazardous chemicals in radioactive waste were not required to be determined or documented before the application of RCRA to radioactive mixed waste at DOE facilities in late 1987. Wastes placed in the LLBGs before late 1987 have not been specifically characterized for hazardous chemical content, but they have been evaluated in the EIS alternatives relative to their radionuclide inventories. In addition, preliminary estimates of chemical inventories in this waste have been developed for analysis in the HSW EIS, and a summary of their potential impacts on groundwater has been added to Volume I Section 5.3 and Volume II Appendix G.

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process.

Interactions among different types of waste that could potentially mobilize radionuclides have also been considered as part of the HSW EIS analysis. However, such interactions typically require specific chemical environments or large volumes of liquid as a mobilizing agent, neither of which are known to be present in the solid waste disposal facilities currently in use (see discussion in Volume II Appendix G). Possible effects of this type could be mitigated by selecting candidate disposal sites to avoid placing waste in locations where previous contamination exists.

Waste sites and residual soil contamination remaining at Hanford over the long term, and which are not specifically evaluated as part of the HSW EIS alternatives, have been evaluated previously as part of NEPA or CERCLA reviews. In those studies, the risks associated with older solid waste burials, tank waste residuals and leaks, and contaminated soil sites were found to be very small, even for alternatives that considered stabilization of the waste in place (DOE 1987, DOE and Ecology 1996, Bryce et al. 2002). Further evaluation of tank wastes is anticipated in the "Environmental Impact Statement for Retrieval, Treatment, and Disposal of Tank Waste and Closure of Single-Shell Tanks at the Hanford Site" (68 FR 1052). The cumulative groundwater impacts analysis in the HSW EIS also includes those wastes, as described in Volume I Section 5.14 and Volume II Appendix L.

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TPA Milestone M-15-00C requires all 200 Area, non-tank farm, pre-record of decision site investigation activities to be completed by December 31, 2008. Site characterization information generated from TPA remedial investigation and LLBG RCRA permitting activities has been used in development of the HSW EIS.

Comments

L-0041/048

DOE needs to develop a comprehensive analysis of the total mass of radioactive and hazardous materials that have already been disposed into the 200-Area subsurface in order to appropriately assess the impact of the additional 33.8 million curies of waste the revised EIS proposes disposing into the subsurface. The mass of material disposed into the Environmental Restoration Disposal Facility, left as residual material, and disposed into the U.S. Ecology Site create a total impact that has not been evaluated. Further, estimating the impact of waste disposal proposed by this EIS, without considering the additions of other wastes from ongoing programs, does not fully anticipate future effects. By understanding the impact proposed, appropriate engineering and mitigation actions can be designed, planned and taken that would minimize overall impacts of Hanford Operations.

Response

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Several mitigation measures have been built into the alternatives addressed in the final HSW EIS, including installation of barriers, liners, and leachate collection systems in disposal facilities; treatment of MLLW to meet applicable RCRA and state requirements; and in-trench grouting or use of HICs for Cat 3 LLW and MLLW.

Comments

L-0055/005

There are uncertainties and controversial issues that are described but largely unaddressed such as actual and projected waste volumes currently on site as well as from off site sources, waste treatment facilities and total project waste and final disposition, fate and transport of contaminants, traffic estimates, human and ecological risk and economics amongst many others remain unresolved.

Response

The HSW EIS uses best available data for estimating inventories of hazardous and radioactive wastes. These data are obtained from information management systems maintained at Hanford and other DOE sites. Most of the waste will be generated by environmental restoration activities, and there is uncertainty about the amounts that will be generated. Areas of uncertainty are discussed in Volume I Section 3.5.

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

Several mitigation measures have been built into the alternatives addressed in the final HSW EIS, including installation of barriers, liners, and leachate collection systems in disposal facilities; treatment of MLLW to meet applicable RCRA and state requirements; and in-trench grouting or use of HICs for Cat 3 LLW and MLLW. Revised analyses in the final HSW EIS indicate that such measures would reduce the estimated releases and levels of groundwater contamination. As set forth in Volume I Section 5.3, for the action alternatives, constituent concentrations in groundwater at 1 km from the disposal facilities are expected to be below the benchmark drinking water standards. Water quality in the Columbia River would be virtually indistinguishable from the current background levels.

Comments

L-0044/117

Ecology notes that the inventory of waste streams addressed by the RHSW [revised draft HSW] EIS is not complete. Wastes generated by cleanup under Comprehensive Environmental Response, Compensation, and Liabilities (CERCLA) actions that are disposed in the Environmental Restoration Disposal Facility (ERDF) are included only in a cumulative impacts analysis. Tank farm releases and residuals left in tanks appear only in the cumulative analyses, as do wastes in engineered disposal facilities, and pre-1970 potential TRU wastes. With these omissions, the document cannot be said to have fully evaluated waste management practices at the Hanford Site.

Response

The scope of the HSW EIS is discussed in Volume I, Section 1.7. Other past, present, and reasonably foreseeable actions at the Hanford Site are discussed as part of the cumulative impacts in Volume I Section 5.14.

The HSW EIS uses the definition of cumulative impact as defined by the CEQ Regulations (40 CFR 1508.7): "Cumulative impact" is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Potential cumulative impacts associated with implementing the HSW EIS alternative groups are summarized in Volume I Section 5.14. Past, current, and future Hanford activities include treatment and disposal of tank waste, CERCLA remediation projects, previously disposed of waste, decontamination and decommissioning of the Hanford production reactors and other facilities, waste in the PUREX tunnels, operation of a commercial LLW disposal facility by U.S. Ecology, and operation of the Columbia Generating Station by Energy Northwest. Cumulative impacts of storage, treatment, and disposal activities for a range of waste volumes are evaluated and expanded in the final HSW EIS. For most resource and potential impact areas, the combined effects from the alternative groups for the Hanford Only, Lower Bound and Upper Bound waste volumes, or for the No Action Alternative for the Hanford Only and Lower Bound waste volumes, when added to the impacts of these other activities, are small.

The HSW EIS uses best available data for estimating inventories of hazardous and radioactive wastes. These data are obtained from information management systems maintained at Hanford and other DOE sites. Most of the waste will be generated by environmental restoration activities, and there is uncertainty about the amounts that will be generated. Areas of uncertainty are discussed in Volume I Section 3.5.

The HSW EIS includes the impacts of all LLBG previously disposed waste in its evaluations of long-term groundwater impacts in Volume I Section 5.3, Volume I Section 5.11, Volume I Section 5.14, and in Volume II Appendixes F, G, and L. LLBG previously disposed waste includes LLW disposed of since 1962, LLW disposed before and after the regulatory definition of TRU promulgated in 1970, and wastes disposed before and after the application of RCRA hazardous waste management standards to certain Hanford LLW streams in 1987. The HSW EIS impact estimates are based on chemical and radionuclide inventories. Past-buried LLBG wastes will be addressed within the framework for managing RCRA past practice and CERCLA units established under the TPA.